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EDIBLE ROOTS AND BERRIES OF NORTHERN CANADA

BY
A. E. Porsild

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EDIBLE ROOTS AND BERRIES OF NORTHERN CANADA

By A. E. Porsild

This pamphet describes about a score of edible plants that are known o be common in arctic and sub-arctic parts of Canada. The descriptions re simple and non-technical so that the plants may be easily recognized y the layman who has only slight botanical knowledge. The pamphlet is ublished, not with the purpose of advocating would-be travellers in the orth to depend upon the edible plants for even part of their food supply, ut rather because it happens that from time to time travellers in these egions, due to accident or miscarried plans, find themselves without dequate food.

The pamphlet thus describes and illustrates: (1) some of the most ommon edible plants, roots, and berries that may be safely used; (2) uch species as by their palatability or by their antiscorbutic value might dvantageously be used in lieu of fresh or preserved vegetables that the raveller in the Arctic normally is unable to carry.

The plants illustrated and described have all been used regularly when vailable by the writer and other members of his parties; several are well nown and commonly used by the aborigines of the North or have been sed by previous travellers in the Arctic, and some are mentioned in their eports. In addition to the species enumerated there are others known to e edible, but that because of their scarcity are of little importance.

Generally speaking, few if any truly arctic plants are poisonous. outh of the limit of trees there are plants that are suspected of being oisonous or injurious to live stock, but none of these is of a kind that ight be confused with edible species. No poisonous mushrooms or toadtools have ever been reported from the Northwest Territories, nor are oisonous berries known to occur.

Although most travellers or prospectors in the North may never have ccasion to resort to the use of the edible plants found here beyond the ccasional picking of a handful of blueberries, it is nevertheless hoped hat in the odd case, where someone "hath no other meat," the descripons and illustrations in this booklet may be of some help in allaying eedless suffering, or even loss of life due to starvation.

ROOTS

edysarum boreale. Figure 1

(By old-timers in the North known as liquorice-root. Eskimo: MASU.)

Non-climbing perennial herb of the pea family with branching stems, to 2 feet high, terminated by long racemes of showy pink flowers. The eed-pods are flat, 1 to 2 inches long, and are joined together in several oundish sections. The root, which is edible, is a well-developed tap root, mature plants attaining the thickness of a man's finger.

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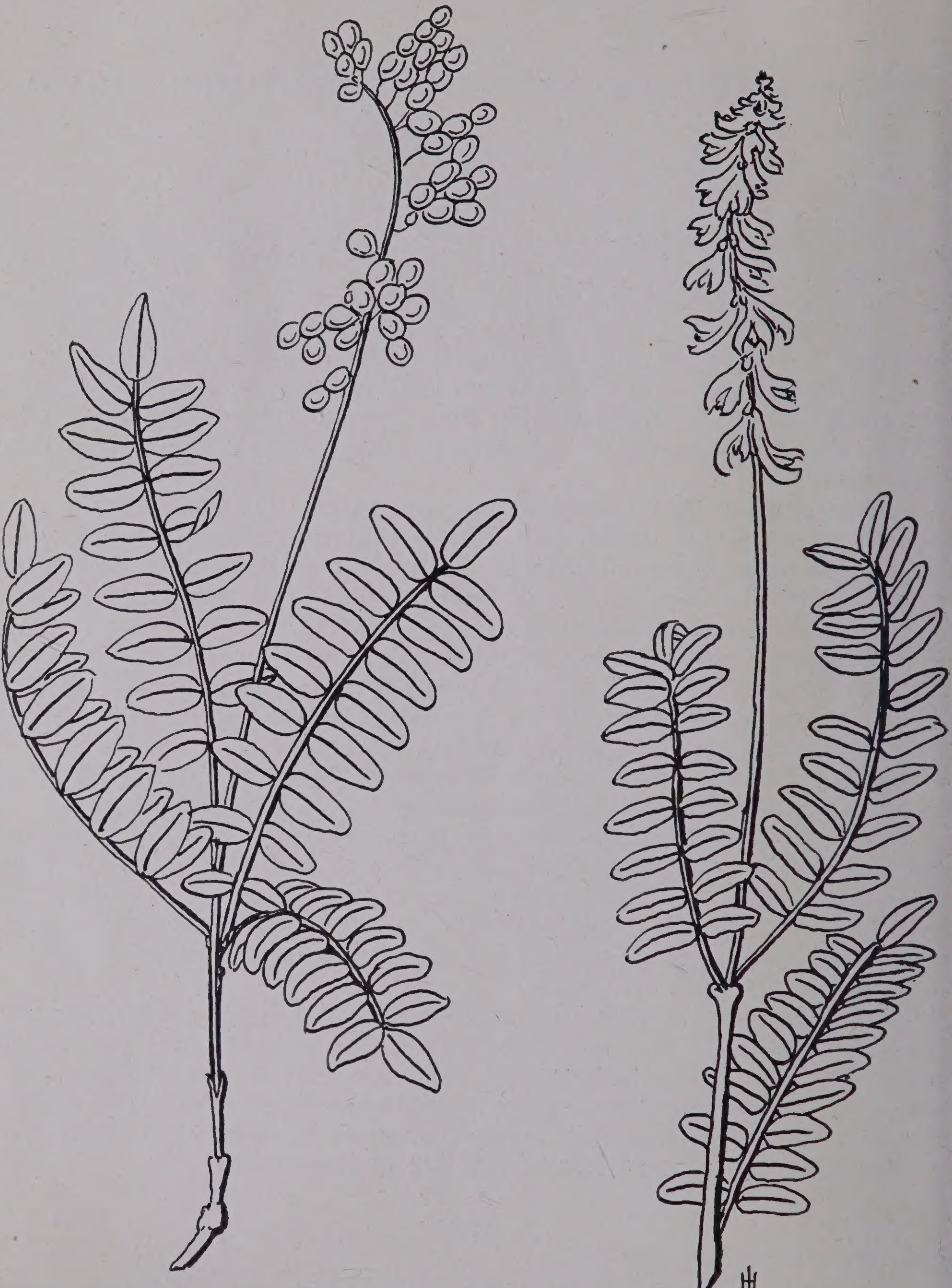

FIGURE 1. *Hedysarum boreale*. ½ natural size.

The plant grows in clumps in well-drained, sandy soil. Its greatest perfection is attained in alluvial, sandy loam, such as is found in some places on river banks and lake shores, where the plant in many cases forms pure stands of considerable extent above high-water mark.

Hedysarum boreale is widely distributed throughout northern Canada, d is found as far north as the shores of the Arctic ocean.

The root is mature in August and may be gathered in quantities with ry little trouble until the ground freezes. In the spring before the new owth has started the roots are even better than in the autumn. During mmer the roots become tough and woody.

The root when cooked, in taste resembles that of young carrots, but more nourishing.

This root during early summer forms the principal food of the barren ound brown bears. Several species of meadow mice and lemmings in e autumn "harvest" the roots and place them "en cache" for the winter. he caches are found in subterranean runways near the surface. The skimo, with the aid of a dog, has no difficulty locating these mouse caches, d frequently obtains his own supply for the winter in this manner.

edicularis lanata (WOOLLY LOUSEWORT. Eskimo: USSUSAQ). Figure 2

Perennial herb 5 to 8 inches high, with from one to several stems rminated by dense, white, woolly spikes of rose-coloured flowers. The af is pinnate and forms a rosette at the base of the stem. Towards aturity the stems stretch and often protrude above the snow during inter.

The well-developed tap root is sulphur yellow. It is sweet like young arrots and may be eaten raw or cooked.

It flowers in June and is found in rather dry tundra throughout arctic anada north of the limit of trees.

olygonum Bistorta and *P. viviparum*. Figure 3

Low, perennial herb from 5 to 10 inches high; glabrous; with simple, olitary, or clustered stems from corm-like, somewhat scaly rootstock. asal leaves oblong-lanceolate up to 8 inches long. Flowers white or pink solitary, dense spikes.

The rootstock of these closely related species is edible. It is of the ize of a pecan and is very rich in starch. It is slightly astringent when aw and is best when cooked.

Common in dry tundra, chiefly north of the limit of trees.

GREENS

olygonum alpinum (WILD RHUBARB). Figure 4

Freely branching perennial herb, 3 to 6 feet high, with thickened, heath-covered joints. Stems reddish, bearing numerous pointed leaves to 8 inches long with crisped edges. Flowers small and insignificant in arge, plume-like panicles.

Prefers moist, alluvial, or open soil such as river banks and recent andslides where it may form pure stands of several acres.

It is very common in the Yukon, on the Mackenzie and its tributaries orth to the limit of trees, but does not occur farther east.

The young, bright red, juicy stems that appear shortly after the snow isappears are edible and when cooked resemble rhubarb.

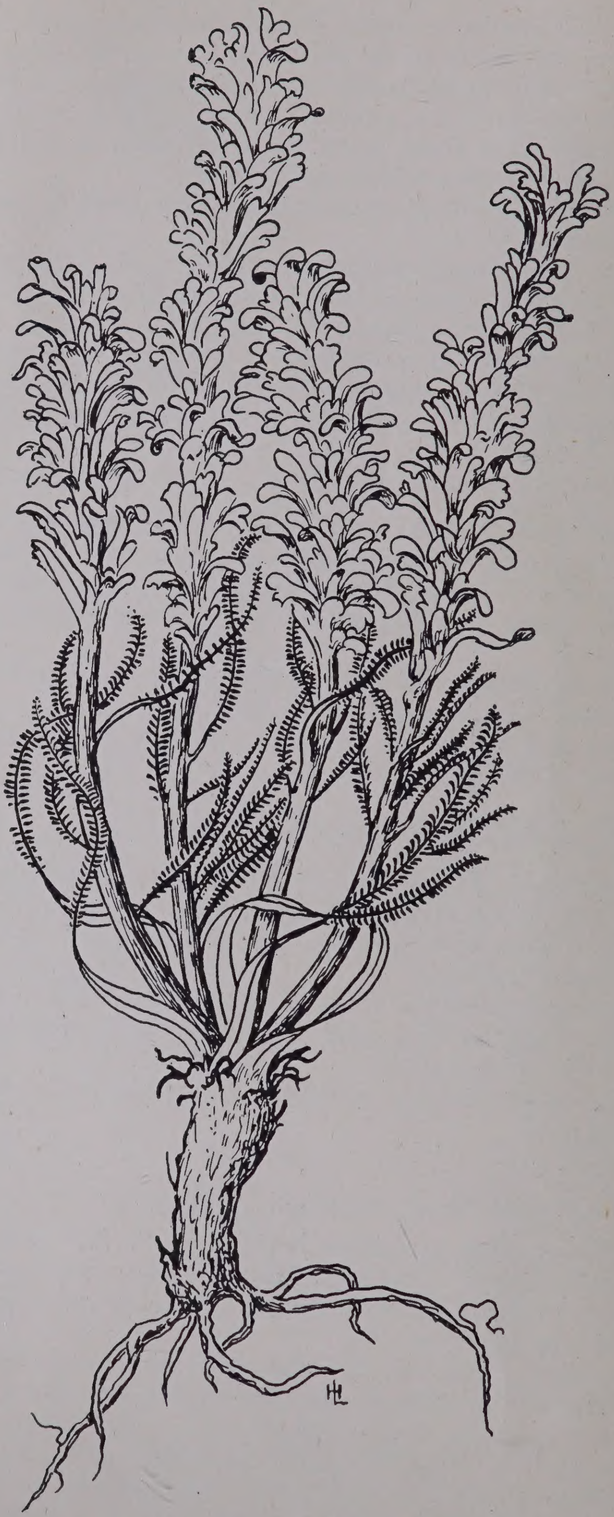

FIGURE 2. *Pedicularis lanata.* $\frac{7}{8}$ natural size.

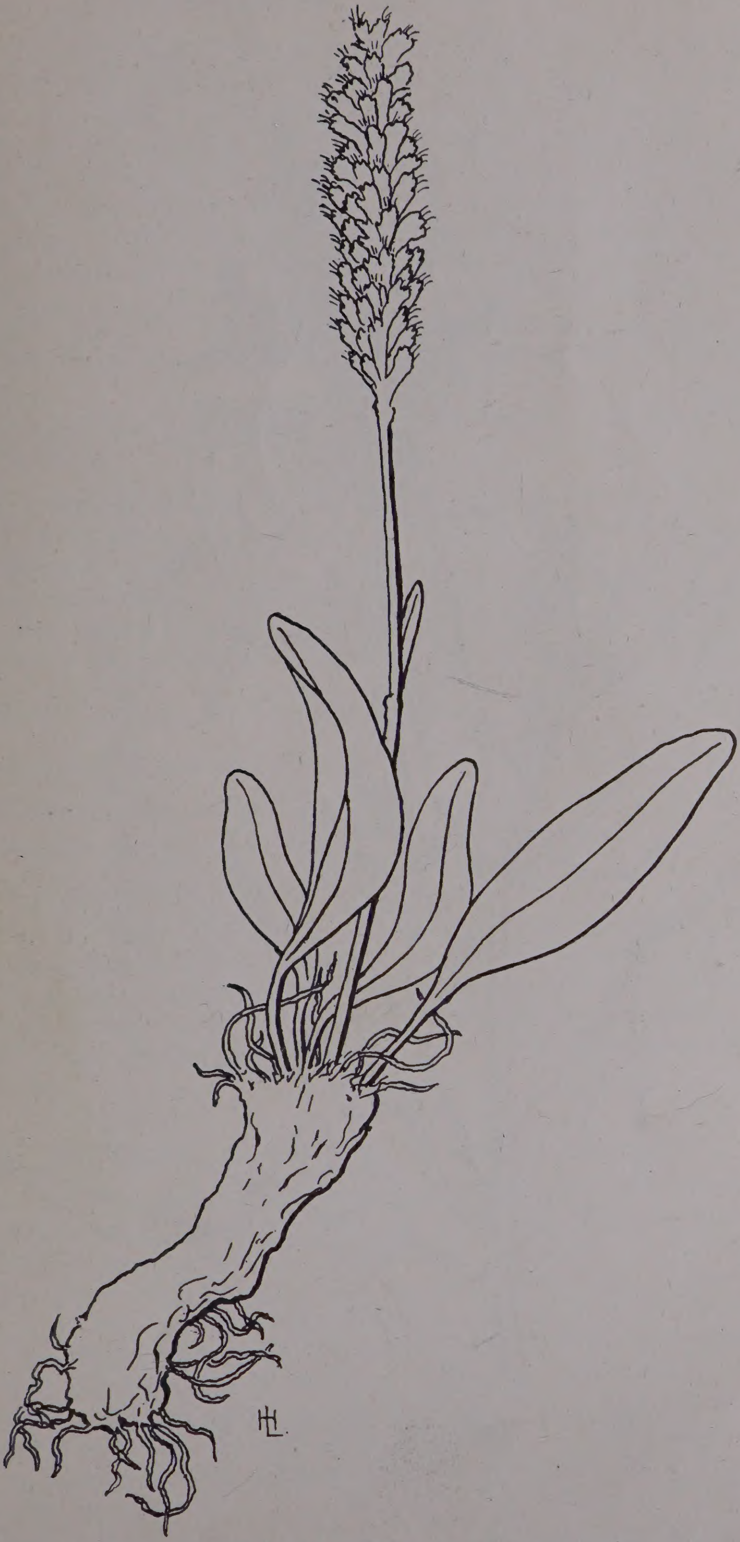

FIGURE 3. *Polygonum Bistorta*. $\frac{7}{8}$ natural size.

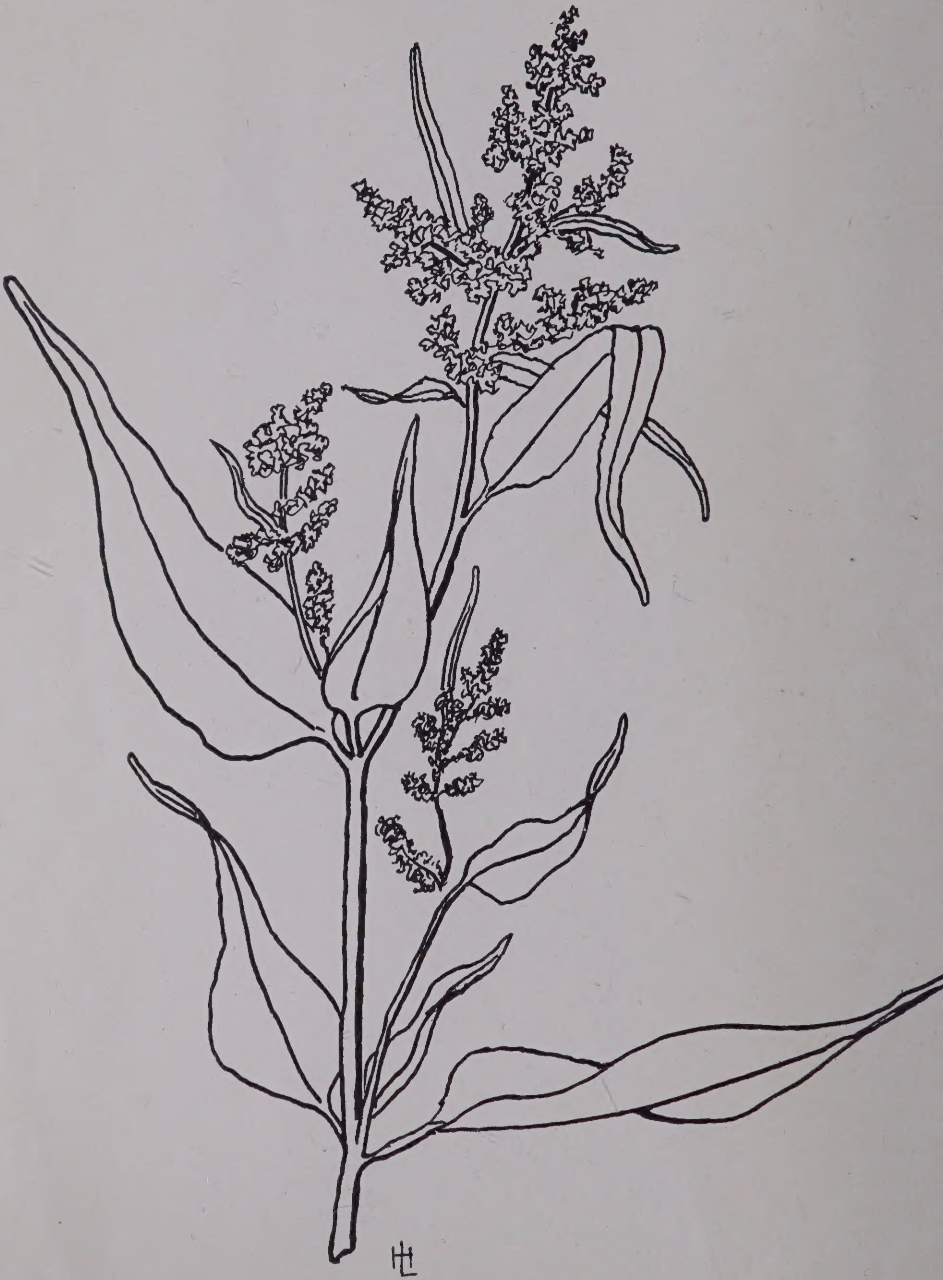

Figure 4. *Polygonum alpinum.* ½ natural size.

yria digyna (MOUNTAIN SORREL). Figure 5

Low, somewhat fleshy perennial herb with erect, simple stem. Leaves ostly basal, with kidney-shaped, 1-inch wide blades on long, slender alks. Flowers small, red or green, in a terminal, plume-like raceme.

The mountain sorrel is found throughout the barren grounds and on e higher mountains south of the limit of trees. It prefers somewhat aded slopes and ravines where the snow accumulates during winter, oviding moisture that lasts throughout the growing season.

The succulent, juicy leaves and stems are edible. When raw they are mewhat acid but very refreshing, when cooked their flavour and appearnce resemble spinach. Because of its habit of growth the fresh and green aves of the mountain sorrel may be found throughout the summer.

pilobium latifolium (BROAD-LEAVED WILLOW HERB—NORTHERN FIREWEED). Figure 6

Erect, glabrous, simple or branching, perennial herb. Leaves willowke, dark green, sessile, and fleshy. Flowers purple, very large and showy leafy racemes.

Abundant throughout the Arctic on sandy or gravelly soil such as river creek beds, where in many places large clumps are found.

The fleshy leaves are edible when cooked and in taste resemble spinach.

ANTISCORBUTICS

icea glauca and *P. mariana* (WHITE AND BLACK SPRUCE)

An infusion made from the young twigs and leaves of spruce is condered valuable for the cure and prevention of scurvy.

ochlearia groenlandica (SCURVY GRASS). Figure 7

Annual or biennial, diffuse, branching, and somewhat fleshy herb. ower leaves bright green, roundish or kidney-shaped on short stalks. lowers inconspicuous, white, in few-flowered racemes. Seed-pods globular.

The scurvy grass grows abundantly along seashores, but is rarely found ar inland. The plant when eaten raw as a salad is considered a valuable ntiscorbutic.

BERRIES

accinium Vitis-Idaea L. (MOUNTAIN CRANBERRY). Figure 8

Low, creeping shrub with dark green, leathery, and persisting leaves. lowers bell-shaped, white or pink, in small, nodding, terminal clusters. he dark red berries ripen in August and September, but remain on the ines throughout the winter, and the following spring when the snow lisappears are sweeter, and even better to eat, than in the autumn.

The mountain cranberry is widely distributed throughout northern anada and occurs north at least to the arctic seacoast, but does not as rule produce berries north of the limit of trees. It prefers an acid soil nd is found in moist as well as in dry places. Its greatest perfection is eached in open birch or willow thickets, where in some years the vines re red with the fruit.

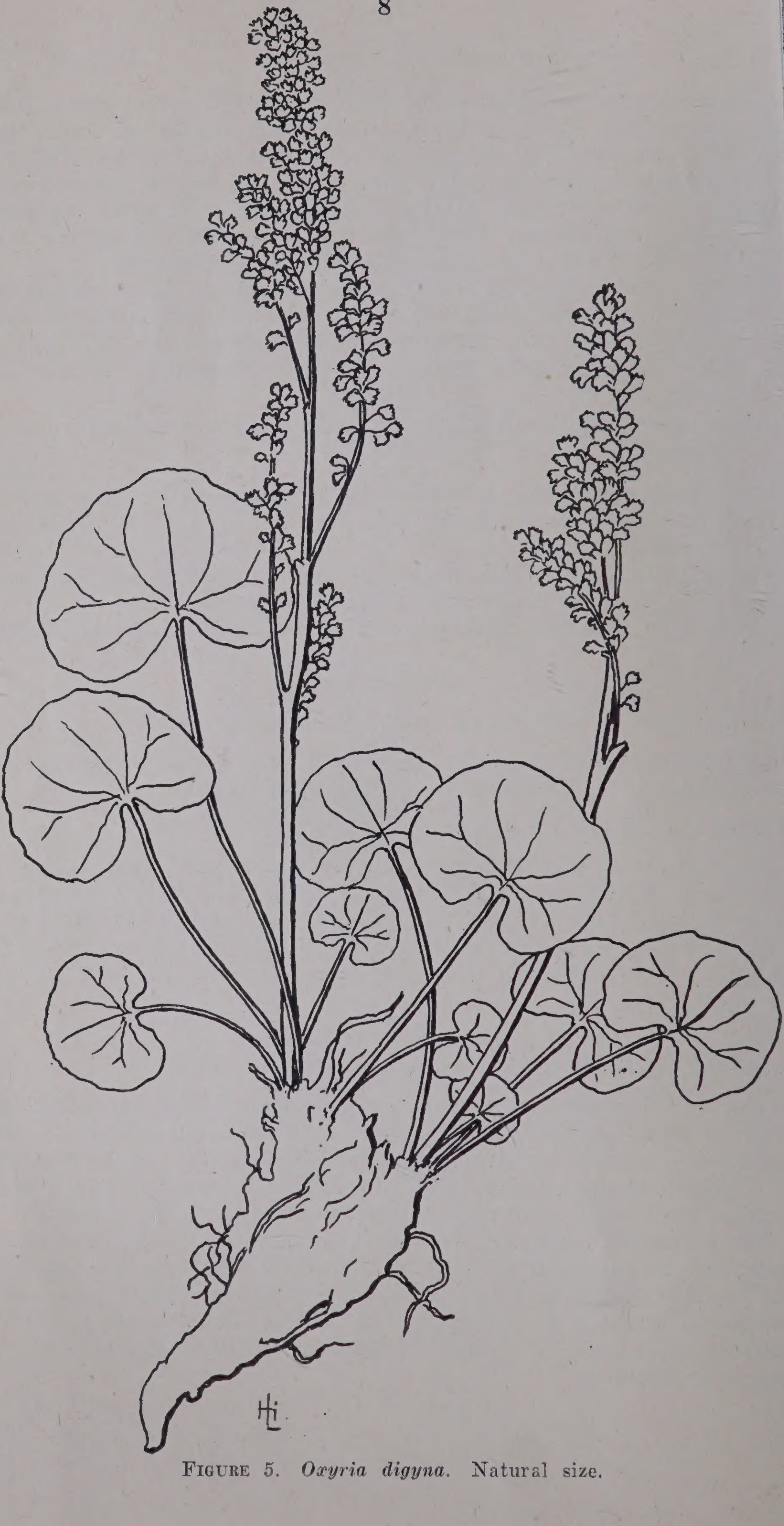

FIGURE 5. *Oxyria digyna.* Natural size.

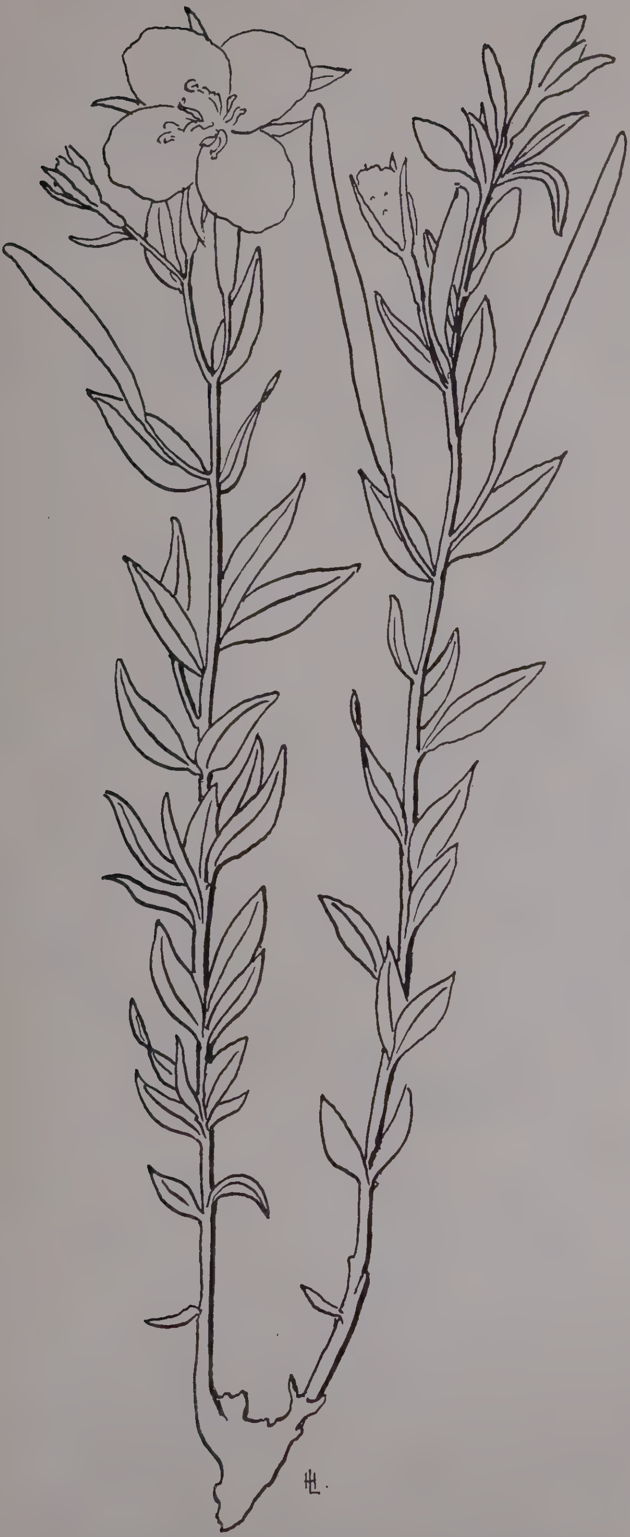

FIGURE 6. *Epilobium latifolium.* $\frac{7}{10}$ natural size.

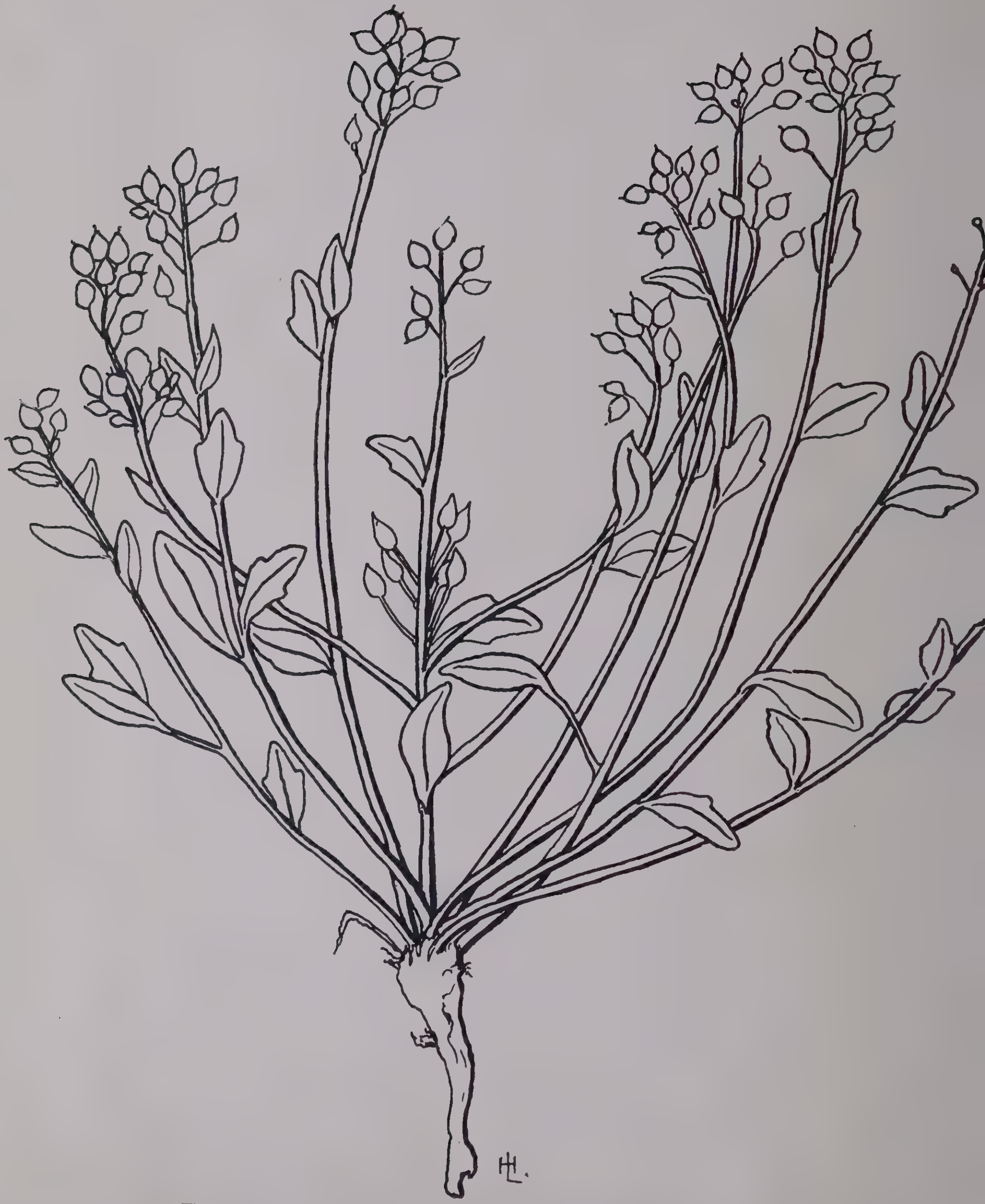

FIGURE 7. *Cochlearia groenlandica.* Approximately natural size.

When gathered in the autumn the berries, if kept frozen, will keep til the next spring. They are considered better flavoured than the uthern cranberry, and are excellent for pies and jellies. Due to its high tamin content the mountain cranberry is considered a most valuable tiscorbutic.

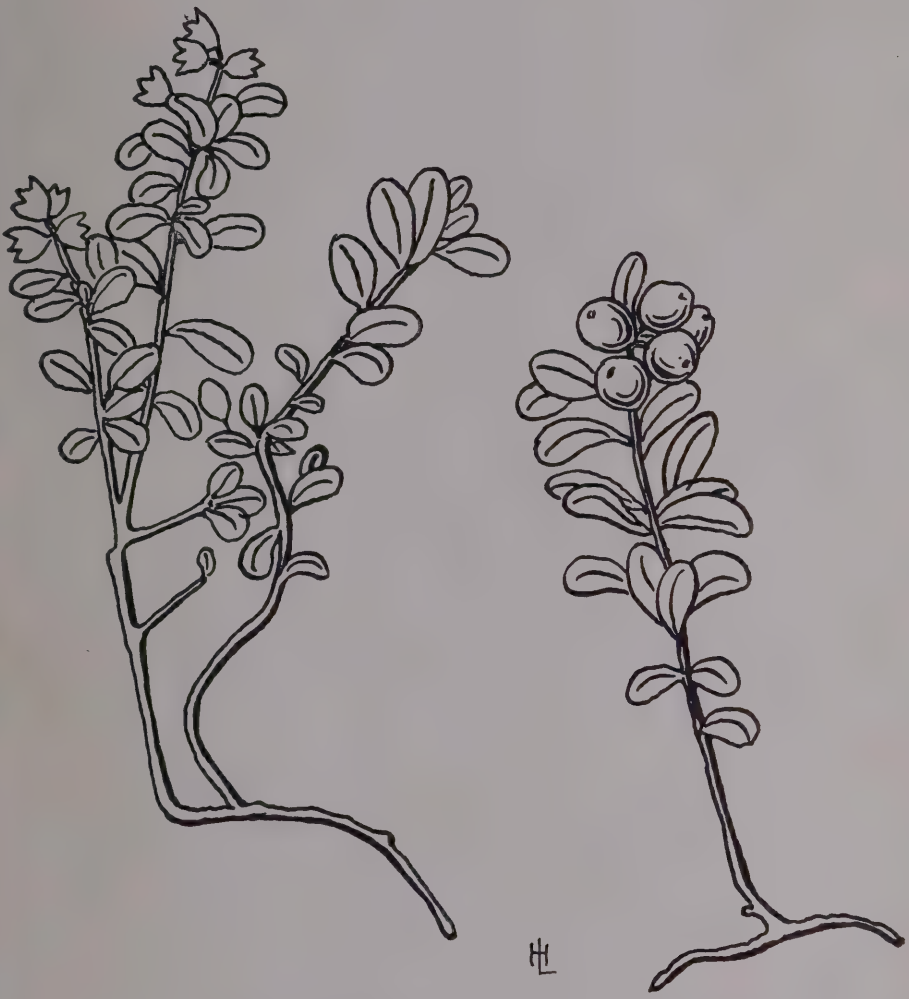

FIGURE 8. *Vaccinium Vitis-Idaea.* Natural size.

accinium uliginosum and *V. caespitosum* (DWARF AND BOG-BILBERRY)

Low, branching, erect, or decumbent shrub with small, oval, deciduous eaves. Flowers small, urn-shaped, whitish pink. Berries, blue to black vith a bloom, ripen early in August.

The bilberry is extremely common throughout the North, and in some ears produces an abundance of sweet, delicious berries. It grows in acid oil in open places, and inhabits dry as well as moist places.

Rubus Chamaemorus (CLOUDBERRY OR SALMON-BERRY, BAKE-APPLE). Figure

Herbaceous, low perennial from a creeping rootstock. Leaves roun or kidney-shaped, five- to nine-lobed, stalked. Flowers solitary, termina ½ to 1 inch broad, and white. The immature fruit is reddish, becomin yellow and very juicy when ripe. It is of the size of a large raspberry which indeed it resembles except for the colour. It ripens in July or earl August.

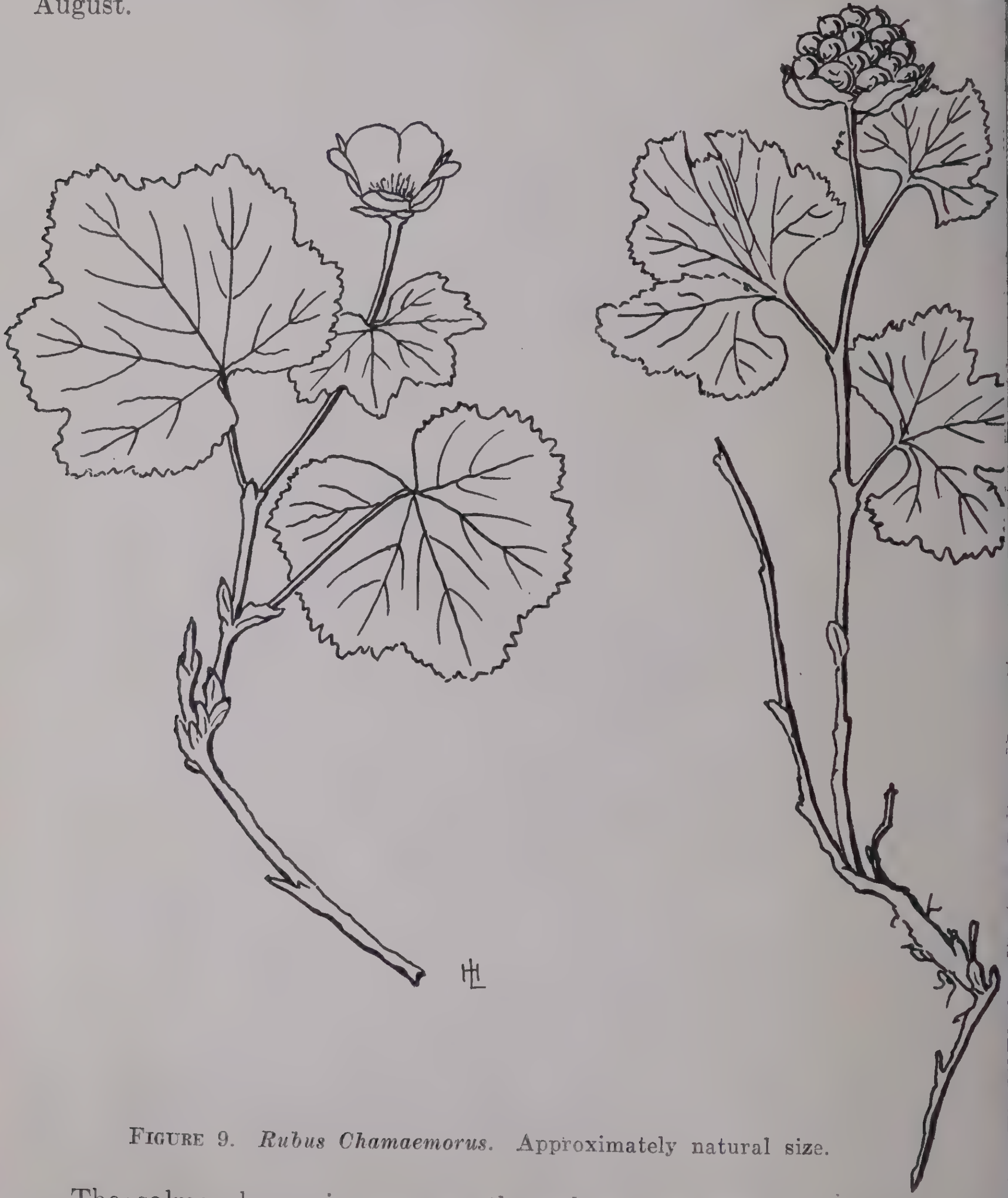

FIGURE 9. *Rubus Chamaemorus.* Approximately natural size.

The salmon-berry is common throughout the North at least to the Arctic ocean, and except near its northern limit in favourable years produces an abundance of fruit. It always grows in peaty soil. When eaten uncooked in considerable quantities the berries have been found to be mildly laxative.

mpetrum nigrum (BLACK CROWBERRY). Figure 10

Depressed or spreading, freely branching, evergreen shrub. Leaves
ear, spreading, resembling those of a conifer. The flowers are incon-
icuous and solitary in the axils. The black and shiny berries are very
icy and sweet.

The crowberry is found throughout northern Canada, and even on
e arctic islands normally produces fruit. It prefers sandy or rocky
il and reaches its greatest perfection near the seacoasts. Where found it
oduces an abundance of fruit. In some parts of the Arctic the berries
e gathered by the Eskimo under the snow, when they are scooped into
large sieve through which the snow, leaves, and foreign matters are
fted. The berries keep well so long as frozen.

rctostaphylos alpina (ALPINE BEARBERRY)

Low, trailing shrub with shreddy bark, and deciduous, obovate
aves. The flowers are small and appear in clusters toward the end of
e branches early in the spring before the leaves are unfolded.

The berries are black or red, juicy but rather insipid.

The alpine bearberry is exceedingly common throughout northern
anada, producing fruit as far north as the Arctic sea. When in the
utumn at the first frost the leaves turn bright red, often entire mountain-
des are brilliantly coloured by them.

rctostaphylos Uva-Ursi (RED BEARBERRY-KINNIKINIC)

Trailing, evergreen shrub with small, bell-shaped, pink flowers in
odding, terminal clusters. The coral-red and somewhat mealy berries
e quite nourishing. They are rather tasteless when raw, but are quite
alatable when cooked.

The Kinnikinic is common in northern Canada, particularly on lime-
one or non-acid rock. The ground or powdered dry leaves are fre-
uently used by the natives as a substitute for tobacco, or mixed with it.

ibes oxyacanthoides (NORTHERN GOOSEBERRY)

This is one of the most common and well-known berries in the north-
estern part of the Northwest Territories as far north as Great Bear lake.
n gravelly river banks and on recent clearings it in many places forms
ense thickets. The fruit which is small but well flavoured ripens about
e first of September.

ibes triste (RED CURRANT)

The red currant occurs throughout the wooded parts of the Northwest
erritories north to the delta of the Mackenzie. The well-flavoured
erries that grow in drooping racemes are ripe in August, but last only a
ort time.

ubus Idaeus (WILD RASPBERRY)

This wild raspberry closely resembles the cultivated variety, and is
ommon in wooded parts of the Northwest Territories north to Great Bear
ke. It prefers dry, rocky country and recent burns, where it forms
ense thickets. The berries which are smaller than those of the cultivated
ariety, but of excellent flavour, are ripe in August.

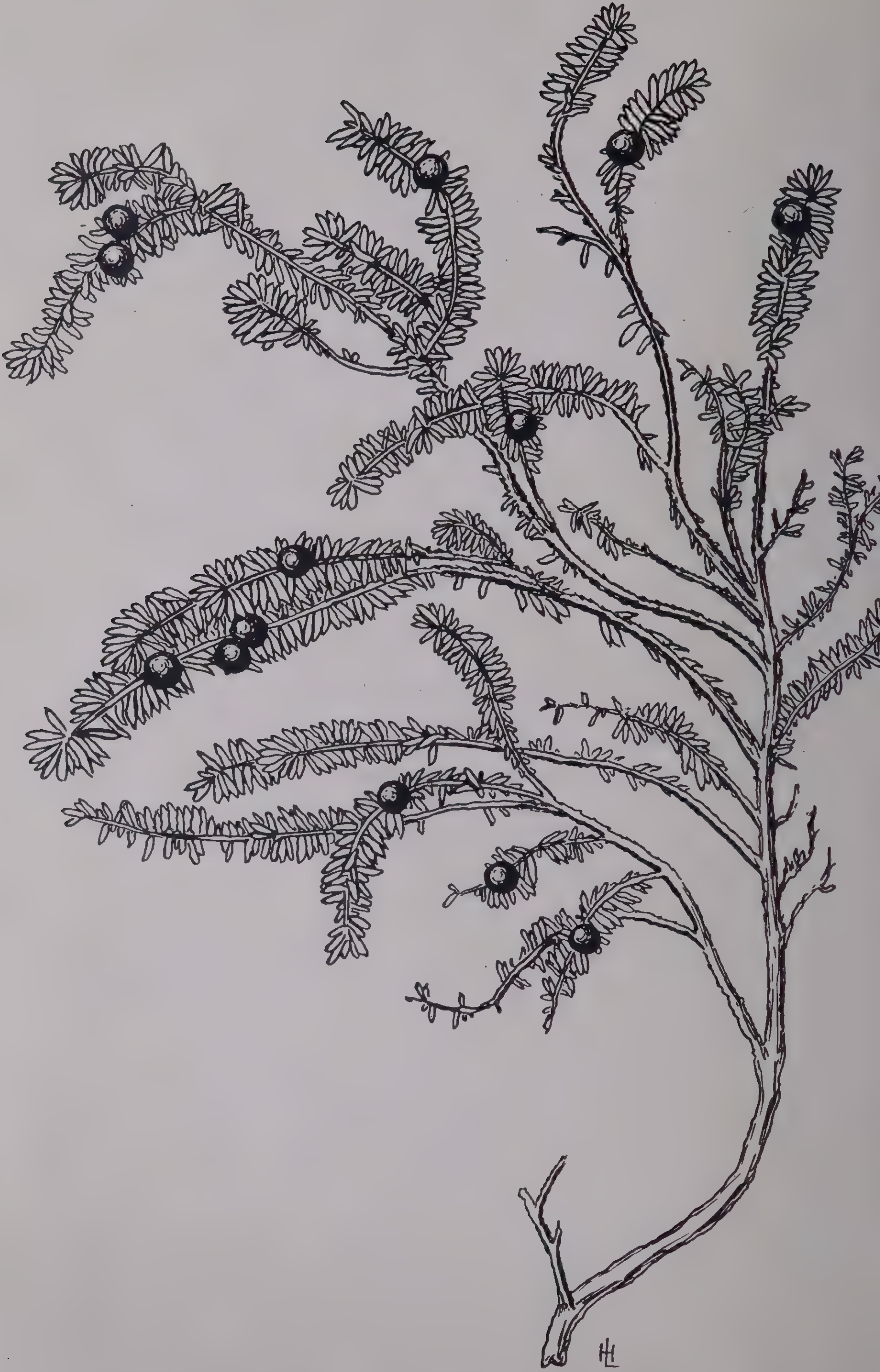

FIGURE 10. *Empetrum nigrum.* 7/8 natural size.

garia glauca (WILD STRAWBERRY)

This small-berried, but well-flavoured, strawberry grows abundantly g the banks of the Mackenzie and its tributaries north to Great Bear . The berries are ripe late in July and the early part of August.

FUNGI AND LICHENS

Many different kinds of edible mushrooms and puffballs occur ughout the North, and after a period of rain bushels of these fungi be gathered almost anywhere. So far no poisonous species have been detected in the Northwest Territories. One poisonous toadstool *nanita phalloides*), however, has been reported from Athabaska lake, may also be expected in rich woods of the valleys of Slave, Liard, upper Mackenzie rivers. Mushrooms and puffballs are greedily eaten ll herbivorous mammals of the North.

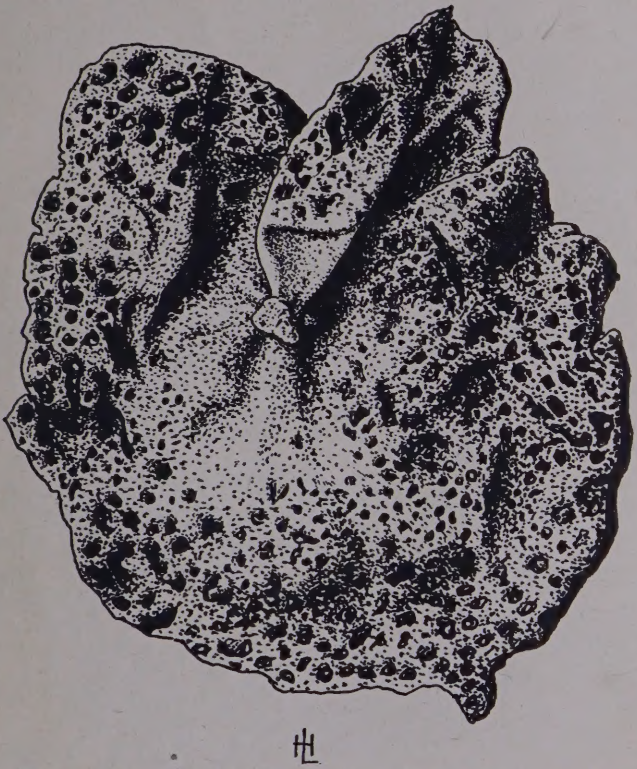

FIGURE 11. *Umbilicaria Muhlenbergii.* Natural size.

Of the various edible plants occurring in the north the greatest food ue perhaps is possessed by the lichens, in many cases erroneously rred to as " mosses."

Lichens are low, variously shaped, grey, brown, or black plants that many parts of the North form an important element in the flora. anically they are considered akin to the fungi, and like these have no leaves nor green chlorophyl or leaf-pigment. Three principal groups recognized, based on their life-forms, known as fruticose, foliose, and staceous lichens.

None of the lichens occurring in the North is poisonous, but most of m contain an acid that is bitter and sometimes nauseous and may cause severe internal irritation if not first extracted by boiling or soakin water. Even a very small quantity of soda or other alkali added to water materially reduces this acid. Following the preliminary soaking lichens are dried until brittle and then powdered, which may be done rubbing between the palms of the hands or by pounding with a stone

The powdered lichen if put to macerate in water overnight, w boiled jellies or becomes mucilaginous. It is best used with other fo If mixed with a small quantity of flour a dough is formed, which may baked into bread or biscuit.

Numerous species of lichen occur in great abundance in nort Canada, and several kinds are edible if treated in the way descri above. Rock lichens, known by the "Voyageurs" as Tripe de Roch Rock Tripe (*Umbilicaria Muhlenbergii,* Figure 11. *U. vellea, U. hy borea* a.o.) are black or brown, leathery lichens which grow on the a Precambrian rocks only. Their irregular, saucer-shaped fronds attached to the rocks by the centre. When dry they are hard and bri but in damp weather become soft and cartilaginous, and when in this c dition are easily collected.

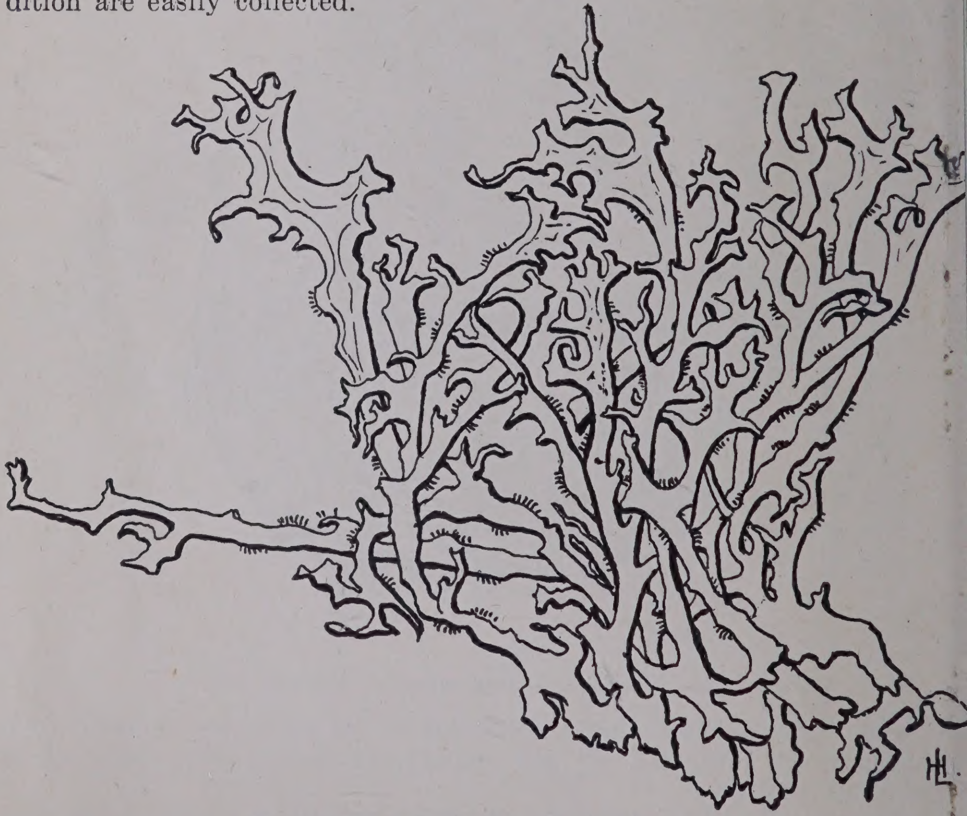

FIGURE 12. *Cetraria islandica.* Natural size.

The "Iceland moss" (*Cetraria islandica*), Figure 12, and "Reind moss" (*Cladonia rangiferina*), Figure 13, are low, bushy, coral-l lichens that grow abundantly on the ground. The former is dark bro its fronds are strap-like, ciliate on the edges. It grows in colonies in rat soil and is common throughout northern Canada. Reindeer moss is yish, much branched, coral-like lichen. It prefers hollows or slopes e snow cover is assured during winter. It is very common throughout orth, and indeed often occurs in such large colonies that distant hills ar snow covered.

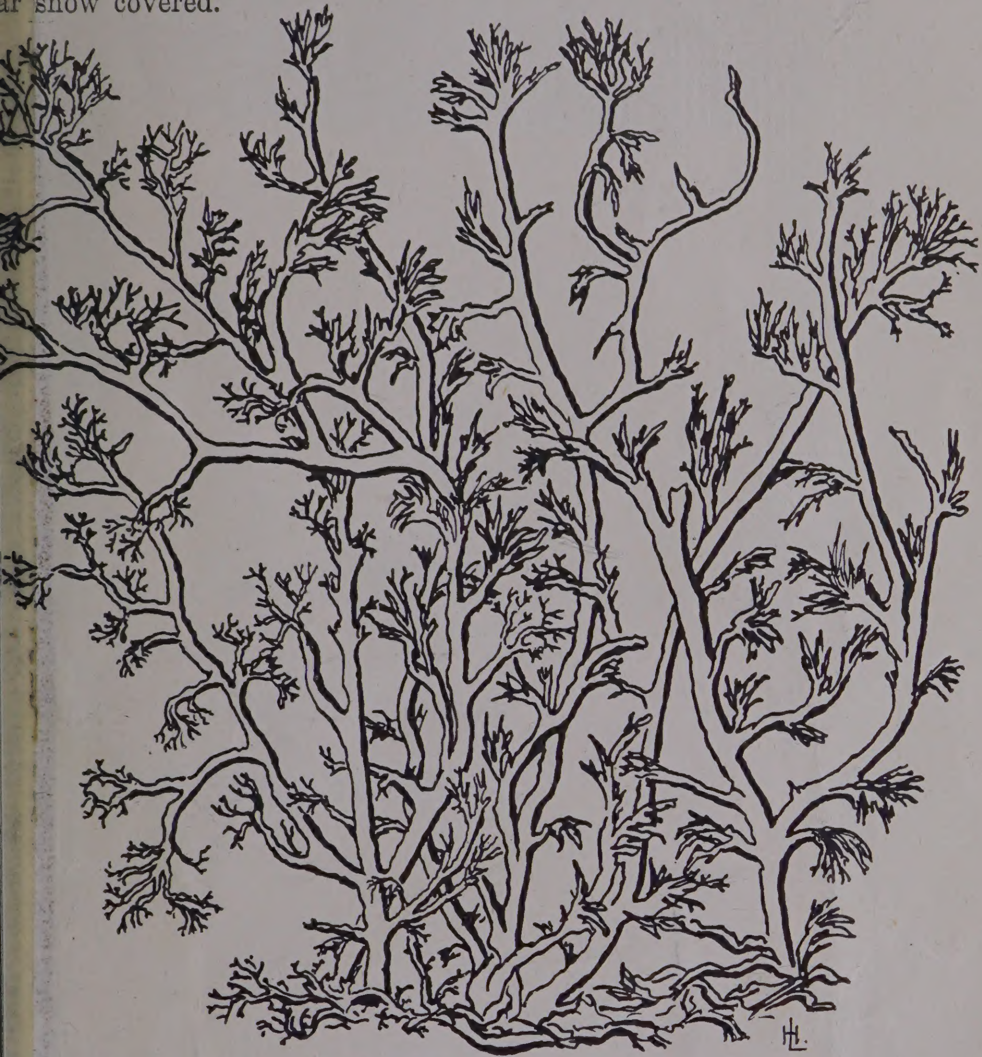

FIGURE 13. *Cladonia rangiferina.* Approximately twice natural size.

t is well known that caribou and reindeer, and to a lesser extent other orous animals of the North, live on lichens during winter. In the ern European countries the "Iceland moss" as well as several kinds Reindeer moss" are harvested commercially and extensively used winter as fodder not only for reindeer but for cattle, horses, sheep, and pigs.

Vhen harvested commercially the dry lichen is compressed and ed in 100-pound bales. When to be used hot water is poured over chen which when sprinkled with salt is a favourite fodder.

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